IN THE CLAIMS:

Please amend claims 1, 3, 5, 7, and 9 as follows.

1. (Currently Amended) A method for controlling an injection molding machine including a heating cylinder and a screw disposed in the heating cylinder, and performing a plasticization/measuring process and an injecting process, said method comprising the steps of:

defining a synchronization ratio S of a rotation speed of the screw to be 100 % when the position of a flight thereof does not apparently move relative to a constant backward speed V of the screw; ~~and~~

moving the screw backwards at the constant backward speed V while rotating it after completion of the measuring process or the injecting process; <u>and</u>

<u>controlling a density distribution of molten resin at a nose portion of the screw,</u>

wherein a rotation speed R of the screw during the backward movement is given by multiplying the rotation speed R, which is expressed by the equation, R = backward speed V/pitch P of the flight, by an arbitrary synchronization ratio Sx.

2. (Original) A method for controlling the injection molding machine according to claim 1,

wherein, when the synchronization ratio S is less than 100 %, the screw is rotated more slowly relative to the backward speed V of the screw, so that a resin in the heating cylinder tends to be dragged backwards with the flight of the screw; and

wherein, when the synchronization ratio S is 100 % or more, the screw is rotated faster relative to the backward speed V of the screw, so that the resin in the heating cylinder tends to be fed forward of the screw.

3. (Currently Amended) A method for controlling an injection molding machine including a heating cylinder, a screw disposed in the heating cylinder, a first driving source for driving the screw in an axial direction, a second driving source for rotating the screw, position detecting means for detecting an axial position of the screw, rotation-speed detecting means for detecting the rotation speed of the screw, and a controller for controlling the first driving source and the second driving source dependent on the detecting signals transmitted from the position detecting means and the rotation-speed detecting means, and performing a plasticization/measuring process and an injecting process, said method comprising the steps of:

defining a synchronization ratio S of a rotation speed of the screw to be 100 % when the position of a flight thereof does not apparently move relative to a constant backward speed V of the screw~~,~~<u>; and</u>

<u>controlling a density distribution of molten resin at a nose portion of the screw,</u>

wherein the controller moves the screw backwards at the constant backward speed V while rotating it after the completion of the measuring process or the injecting process~~;~~ <u>,</u> and

wherein a rotation speed R of the screw during the backward movement is given

by multiplying the rotation speed R, which is expressed by the equation, R = backward speed V/pitch P of the flight, by an arbitrary synchronization ratio Sx.

4. (Original) A method for controlling the injection molding machine according to claim 3,

wherein, when the synchronization ratio S is less than 100 %, the controller generates a tendency to drag a resin in the heating cylinder backward with the flight of the screw by rotating the screw more slowly relative to the backward speed V of the screw; and

wherein, when the synchronization ratio S is 100 % or more, the controller generates a tendency to feed the resin in the heating cylinder forward of the screw by rotating the screw more faster relative to the backward speed V of the screw.

5. (Currently Amended) A method for controlling an injection molding machine in order to perform a resin plasticization/measuring process and an injecting process, wherein~~:~~ the injection molding machine includes a heating cylinder and a screw having a flight of a pitch P, the screw being arranged within the heating cylinder~~;~~, the method comprising the steps of:

defining a synchronization ratio S with reference to a rotation speed R and a constant linear backward speed V of the screw, the synchronization ratio S being equal to 100% when the flight does not apparently move while the screw is rotated and linearly

moved backwards, the synchronization ratio S being smaller than 100% when the flight moves backwards while the screw is rotated and linearly moved backwards, the synchronization ratio S being greater than 100% when the flight moves forwards while the screw is rotated and linearly moved backwards;

controlling a density distribution of molten resin at a nose portion of the screw; and

~~the method further comprising the step of~~ controlling the screw to linearly move backward at a selected synchronization ratio Sx and simultaneously rotate after completion of the plasticization/measuring process or the injecting process, wherein~~;~~

a selected rotation speed Rs of the screw being given by~~:~~

$$Rs = (V/P) \times Sx.$$

6. (Original) A method for controlling the injection molding machine according to claim 5, wherein:

the resin in the heating cylinder tends to be dragged backwards with the flight of the screw when the selected synchronization ratio Sx is smaller than 100%;

the resin in the heating cylinder tends to be fed forward of the screw relative to the backward movement of the screw when the selected synchronization ratio Sx is not smaller than 100%.

7. (Currently Amended) A method for controlling an injection molding machine

in order to perform a resin plasticization/measuring process and an injecting process, wherein~~:~~ the injection molding machine includes a heating cylinder, a screw having a flight of a pitch P and arranged within the heating cylinder, a first driving source for driving the screw in an axial direction, a second driving source for rotating the screw, a position detecting device for detecting an axial position of the screw, a rotation-speed detecting device for detecting the rotation speed of the screw, and a controller for controlling the first and the second driving sources in response to detecting signals transmitted from the position detecting device and the rotation-speed detecting device,~~;~~ the method comprising the steps of:

defining a synchronization ratio S with reference to a rotation speed R of the screw and a constant linear backward speed V of the screw, the synchronization ratio S being equal to 100% when the flight does not apparently move while the screw is rotated and linearly moved backwards, the synchronization ratio S being smaller than 100% when the flight moves backwards while the screw is rotated and linearly moved backwards, the synchronization ratio S being greater than 100% when the flight moves forwards while the screw is rotated and linearly moved backwards;

controlling a density distribution of molten resin at a nose portion of the screw; and

~~the method further comprising the step of~~ controlling the movement so that the screw is linearly moved backward at a selected synchronization ratio Sx and simultaneously controlling the rotation of the screw, after completion of the

plasticization/measuring process or the injecting process, wherein~~;~~

a selected rotation speed Rs of the screw being given by~~:~~

$$Rs = (V/P) \times Sx.$$

8. (Original) A method for controlling the injection molding machine according to claim 7, wherein:

the controller controls the movement of the screw so that the resin in the heating cylinder tends to be dragged backwards with the flight of the screw, when the selected synchronization ratio Sx is smaller than 100%;

the controller controls the movement of the screw so that the resin in the heating cylinder tends to be fed forward of the screw relative to the backward movement of the screw, when the selected synchronization ratio Sx is not smaller than 100%.

9. (Currently Amended) A method for controlling an injection molding machine in order to control the movement of a molten resin in a heating cylinder of the injection molding machine, the injection molding machine including a screw arranged within the heating cylinder to be rotatable and to be linearly movable and having a flight of a pitch P, the molten resin being moved in a forward feeding direction during a plasticization process and an injecting process,~~;~~ the method comprising the steps of:

linearly moving the screw backwards relative to the forward feeding direction of the molten resin at a constant backward speed;

controlling a density distribution of molten resin at a nose portion of the screw; and

simultaneously rotating the screw in the forward feeding direction at a rotation speed corresponding to the constant backward speed, after completion of the plasticization process or the injecting process.

10. (Previously Presented) A method for controlling an injection molding machine according to claim 9, wherein, when the screw linearly moves backward, controlling the screw to move at a linear backward speed V and a rotation speed R in the forward feeding direction to define a synchronization ratio S based on the rotation speed R of the screw and the linear backward speed V of the screw, the synchronization ratio S being equal to 100% when the flight does not apparently move while the screw is rotated and linearly moved backwards in the forward feeding direction, the synchronization ratio S being smaller than 100% when the flight moves backwards while the screw is rotated and linearly moved backwards in the forward feeding direction, the synchronization ratio S being greater than 100% when the flight moves forwards while the screw is rotated and linearly moved backwards in the forward feeding direction.

11. (Original) A method for controlling an injection molding machine according to claim 10, wherein a selected rotation speed Rs of the screw being given by:

$$Rs = (V/P) \times S.$$

12. (Original) A method of controlling an injection molding machine according to claim 10, wherein:

the resin in the heating cylinder tends to be dragged backwards relative to the forward feeding direction with the flight of the screw when a selected synchronization ratio Sx is smaller than 100%;

the resin in the heating cylinder stays there when the selected synchronization ratio Sx is equal to 100%;

the resin in the heating cylinder tends to be fed forward of the screw relative to the forward feeding direction when the selected synchronization ratio Sx is greater than 100%.

13-17. (Canceled)